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A MODULAR GARDEN BUILDING

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Field of Invention

5 This invention relates to a building structure referred to as a garden building, to be used in the compound of a house for various purposes.

Background of the Invention

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The garden building is intended to be a small building structure outside of a house for various utility. It is meant to be available to the user in modular form for the ease of storage and transportation. It is intended that a user may buy 15 the invention in its modular form and takes it home his or her own transport. Then he or she may conveniently set up the garden building in his or her own compound by him or herself, without the need of special tools. It conceived that houses having compounds or gardens yet without a garage might find 20 such a garden building useful, i.e. for storage of gardening tools and related materials.

Generally these advantages in modularity, storage, transportation and setting up and intended usefulness are made 25 available by the simplicity in the design of the invention as a whole. Specifically, the simple and yet practical joints or interconnections that are utilized, which will be exemplified later, enables the user to conveniently set up the garden building in his or her own compound by him or herself, without 30 the need of special tools. The simplicity in design makes the invention cost effective for manufacturer also since it makes it easier to manufacture the invention.

In simple building structures such as this garden building or pet houses or any other similar small and simple building structures, joints have structural importance especially in ensuring that the entire structure is rigid and not shaky or swaying. Therefore, designers of various simple building structures that may also be small have come up with various designs of joints for their structures. GB 2240024 taught joints being inserts and slots. Specifically, the pet house exemplified therein uses H-shape slots and mating walls has H-shape inserts. Although such joints are structurally rigid by themselves, there is little room for tolerance in such a H-joint itself as there are a number of different complementing surfaces that comes into contact simultaneously. This is obvious from tracing the periphery of cross-section of such a joint.

WO0161127 uses panels to form the building itself. It however uses latches and clamps on profiles as means of joining different panels together. GB621389 is a hut that is significantly larger than the present invention. As such it needs to utilize a very rigid structure - metal framework with sole plates for resting on ground. Such rigid base and framework is not necessary for the present invention since it is much smaller and defeats the purposes of invention as briefly mentioned above. DE19920556 and EP1188872 are another two examples of such garden buildings, but they are larger and building them requires local builders; thus labour intensive.

In general, accuracy in manufacturing the joints is critical especially when there are more than two adjoining walls for any particular structure. It can be quite annoying to the user when different parts could not be properly joined together due to manufacturing inaccuracies. Although such inaccuracies can be kept to minimum due to present day manufacturing

technologies, it is still advantageous to keep a joint as simple as possible, since users may not be skillful enough to accurately join together more than two pieces of the building walls. At least, it will involves some trials and errors for 5 some users during the assembly.

Thus it is preferable that joints are kept as simple as possible when without trading off the rigidity of the joint. It will be apparent later especially to persons skilled in the 10 art, that in the present invention jointing problems due to inaccuracies can be kept to a minimum, making manufacturing much cost effective and also much easier for user to assemble. Although there are more complicated joints for different needs, the present invention however do not concern with 15 these.

It is therefore the objective of the invention to be a utility structure in a garden or compound that can be easily set up by the user.

20 It is also the objective of the invention for its overall design to be simple for the ease of storage and transportation, and specifically for ease of setting up, while at the simultaneously maintaining stability and rigidity of 25 the invention.

It is specifically the objective of the invention to achieve above-mentioned advantages by means of simple, regular parts that are joined together by means of simple joints; both parts 30 and joints to be exemplified later.

Summary of the Invention

A modular garden house has sidewalls made up of regular wall panels. These load-bearing sidewalls are held together at their bottom surface and top surface by interconnections with base frame and top frame respectively. The base frame is made up of ring beams joined together by bolts and nuts. The top frame is made up of two opposing side ring beams joined together by a pair of identical triangular frames. These interconnections are made by means of dowels inserted into hole sockets. Roof pieces are roof sheets built on frames. The roof pieces are supported by means of dowels on roof frames inserted into hole sockets on the triangular frames. The opening of the garden building is covered by removable door panels.

Brief Description of the Drawings

Figure 1 shows the complete assembly of the invention.

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Figure 2 shows the top view of the base frame.

Figure 3 shows the interconnection of the wall panels with the base frame.

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Figure 4 shows the assembly of the top frame on top of the wall panels, roof pieces and ridge capping.

Detailed Description of the Preferred Embodiment

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In accordance to the preferred embodiment of the invention, a garden building (100) as shown in Fig. 1 is made up basically of the following elements: wall panels (300), door panels

(310), ring beams (200), triangular frames (410), roof pieces (400) and ridge capping (420).

A ring beam (201) is a rigid, strong and elongated flat beam.

5 Four ring beams (201a, 201b, 201c, 201d) are joined together using bolts and nuts at each of their ends are used to form a rectangular base frame (105) (Fig. 2). The width and length of the garden building (100) is width and length of the rectangular base frame (105). Furthermore, the ring beams
10 (201c) corresponding to the rear side and left (201a) and right side (201b) of the building (100) has holes (202) spaced at regular intervals for interconnection with wall panels (300) that will be explained later.

15 Regular vertical wall panels (300) form the sidewalls (101a, 102a, 103a) of the building on the rear side (103), left (101) and right side (102) of the building. Each wall panels (300) may be embodied as a frame as shown in Fig. 1 and 3. Each vertical wall panel (300) has at least two dowels (301a, 301b,
20 302a, 302b) located at each top (304) and bottom end surface (303) of the wall panels (300) for interconnection of wall panels (300) with base frame (105). The dowels (301a, 301b) at the bottom end surface (303) of any particular wall panel are located in such a manner that each wall panel (300) can be
25 inserted into the predetermined holes (202) on the base ring beams (201a, 201b, 201c). Furthermore, the holes (202) on the base ring beams (201a, 201b, 201c) are distanced so that they not only receive any particular wall panel (300) but can also receive other similar wall panels (300) placed side by side to
30 an already interconnected wall panel. Thus the rear side (103), left (101) and right sidewalls (102) are erected by this means of interconnections using dowels such as those of 301a, 301b, 302a, 302b.

These walls (101a, 102a, 103a) are further steadied by the following manner. Side ringbeams (204a, 204b) that are similar to ringbeams described beforehand (201a, 201b) are interconnected with left (101a) and right sidewalls (102a) at 5 their respective top ends (304). These side ringbeams (204) have holes (205) on them at predetermined locations so that they can be inserted into dowels (302a, 302b) on the top end (304) of these sidewalls (101a, 102a, 103a); in similar manner with the dowels (301a, 301b) inserted into the base frame 10 (101).

A triangular frame (410) is interconnected with the top (304) of the rear sidewall (103a) in similar manner of interconnection using dowels (302a, 302b) on the wall panels 15 (300) with holes (hidden from view) located on the base end surface (411) of triangular frame (410); as in the case with other sidewalls (101a, 102a, 103a). This rear end triangular frame (410c) or referred to as first triangular frame is also joined to the side ringbeams (204a, 204b) using bolts and nuts 20 to form a top frame (106). At this juncture it is evident that this top frame (106) is isometric with the base frame (101). Another triangular frame (410d) similar to the first triangular is joined to the other end of the side ringbeams 25 (204a, 204b) at the front side of the garden building. These triangular frames (410c, 410d) have holes (412) predetermined at location on their inclined surfaces (411).

By now roof pieces (400), which are roof sheets (401) mounted 30 on a frame can be supported on the triangular frames (410) by similar means of interconnections that uses dowel and hole sockets as described above. The roof pieces (400) has dowels (402) at predetermined locations to be inserted into the holes (412) on the inclined surface (411) of the triangular frames (410). After the installations of roof pieces (400) there

ridge capping (420) put over two peaks of the triangular frames (410) to complete the assembly.

Lastly, the door panels (310) are removable panels placed on
5 the opening of the front side (104) of the garden building (100) to cover it. Seams in between one wall panel with other wall panels (300) and with the ringbeams (200) are sealed with weather seals to prevent water leakage.

10 It is to be understood that the present invention may be embodied in other specific forms and is not limited to the sole embodiment described above. However modification and equivalents of the disclosed concepts such as those which readily occur to one skilled in the art are intended to be
15 included within the scope of the claims which are appended thereto.